



CathexisVision 2023

API 2 Feature Overview

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1. Introduction

This document provides a brief overview of the features of the CathesisVision Application Programming Interface (API). This document is not exhaustive. Should further or more detailed information be required, please consult support@cathesisvideo.com.

Note: The full-detail CathesisVision API is confidential and is only released under an NDA. It is applicable for **CathesisVision 2017** and software releases thereafter, and is not backwards compatible. The former API will function on all CathesisVision releases as per its original functionality.

A NOTE ON CAMERA CHANNELS

The CathesisVision software packages have **limits on camera channels**. A multi-sensor camera is physically a single device (camera) but it **requires a camera channel for each one of the internal cameras**. The same applies to an encoder: a 16-channel encoder will account for 16 camera channels on the CathesisVision software, even though it is a single device. Even when a camera or device only uses a single IP license, the camera channel limit will still apply.

USEFUL LINKS

To view **tutorial videos** on CathesisVision setup, visit <https://cathesisvideo.com/resources/videos>

Find answers to Cathesis **Frequently Asked Questions**: <https://cathesis.crisp.help/en/?1557129162258>

2. Features

2.1 General Capabilities

The CathesisVision Application Programming Interface (API) enables third-party software to control system resources and retrieve and manage information from the VMS, via HTTP. Supported Operating Systems are Windows and Linux 32/64-bit up until CV 2021. Thereafter only 64-bit CathesisVision software is available.

2.2 Site List Information

The site is accessed via digest authentication, and is restricted based on the user's preconfigured access level. The API has access to site details via the login server. This includes the site's name and unique identification number as well as API and software version information. LDAP user access is not supported via the API interface.

2.3 Camera Resources

The API provides the ability to list all cameras and camera resources on a site via HTTP. The following information is available from the camera:

- Camera ID and name
- Audio access
- Server internal IP
- Server camera ID
- User assigned ID
- Online
- PTZ, live feeds, and review tracks
- PTZ, Basic access, and set preset access
- PTZ, Number patterns
- PTZ, Number presets
- PTZ, Named presets

2.3.1 Live Feed Streaming

1. The API allows for live camera video feed streaming, through an RTSP session. The recommended protocol is RTP over TCP to minimise packet loss.
2. The maximum number of simultaneous RTSP connections is configurable.
3. Live video feed streaming requires client authentication.
4. HTTP/HTML5 live feed streaming is available for HTML5 video tag compatible recordings through a HTTP connection to the server.
5. The API allows the switching cameras to monitors.
6. The API allows for privacy zones to be hidden.

2.3.2 Camera Review

1. The API allows for the review of HTML5 video tag compatible recorded video footage through an HTTP connection to the server.
2. The API allows for review video footage to be retrieved from a specific date and time (24hr clock).
 - i. If no video footage is present at the time specified, the server will return the video footage closest to the time requested.
 - ii. Audio is not supported for live or review when using HTTP streaming.
3. The API allows for a field in the request which will make the session transmit as fast as the client/connection will allow.
4. The following streaming transports are supported:
 - i. RTP over UDP.
 - ii. RTP over TCP.
5. The API allows for privacy zones to be hidden.
6. The API can be queried to return a timeline (a summary of the periods) for a defined period where video has been recorded.
7. The resolution, playback-rate and overlays are configurable.

2.3.3 Reference Image

A JPEG reference image can be requested for a specific camera. Reference images are updated at 5-minute intervals.

2.3.4 Video Export

Stored video on the NVR can be exported. It is similar to the HTML5 review(recorded) trac streaming but includes a “to” time.

- i. The media data returned will be in an MP4 container format.
- ii. Only 2 simultaneous active export sessions are recommended.
- iii. Video clips can be up to a maximum of 30 minutes.

2.3.5 Audio Call/Listen

The API allows for the streaming of independent (i.e. not tied to video) audio inputs and outputs both to and from the audio inputs and outputs on the server. This is done over a SIP session. Follow the below steps:

1. Using a 10-digit number combination of input and output ID will create a SIP audio session.
2. The SIP server will require authentication.

2.3.6 PTZ Camera Control

The API provides the following PTZ camera control:

1. Move
2. Go to preset
3. Set/save preset
4. Focus/iris control
5. Run preset pattern (tour)
6. Enter dome menu
7. Send Key

2.3.7 Video Wall Control

The API provides the below basic videowall control:

1. List monitors
2. Camera to monitor (fullscreen)

2.4 Input/Output Resource Management

1. The API supports monitoring of all site I/Os via HTTP.
2. On request the API will provide all current site I/Os.
3. The API will also maintain an open connection until disabled and update I/O resources via this connection. These updates will be:
 - i. Resource state changes.
 - ii. Resource added.
 - iii. Resource removed.
 - iv. Resource modified (name changed).
 - v. Output controls shall be Set, Clear, and Pulse.
4. A Virtual Trigger output can be pulsed from the API to trigger a pre-configured Virtual Input on the NVR.

2.5 Receiving Event/Technical Alarms

The API allows for the reception of alarms from the server via HTTP POST requests from a site. This includes both **Technical alarms** (alarms related to the functioning of the site), and **Event alarms** (alarms triggered by VMS and I/O events).

The server is able to deliver the following alarm information:

1. Source site ID
2. Source site name
3. Alarm type (technical/event)
4. Alarm name
5. Alarm description.
6. Associated camera resources.

2.6 ANPR

Push notifications allow the CathexisVision VMS to push detections to a receiving server.

The server is able to deliver the following ANPR detection information:

1. Detector ID, Time (ISO8601) format, Detection result
2. Plate License
3. Confidence
4. Plate colours, Place of issue, Tags – all ANPR engine dependent.
5. Plate Image
6. Frame image
7. Meta-information about the licence plates as configured in the CathexisVision VMS where populated.

2.7 Thumbnail Image Send

The HTTP/S server allows Push notifications of thumbnail images (raw data) from the CathexisVision VMS to a receiving server. This data can be saved by the HTTP/S receiver as a JPEG image.

The user may choose to send a thumbnail that includes an area around the classified object. This is defined by a number of pixels, or by a percentage of the object's dimensions.

The push notification will include the following information:

1. Camera number
2. Algorithm number
3. Time the object was detected
4. What the object was classified as
5. Classification confidence

2.8 Occupancy

The HTTP/S server allows Push notifications from the CathesisVision VMS of the occupancy count and snapshot in a configure zone to a receiving server.

The push notification will include the following information:

1. Camera number
2. Algorithm number
3. Time the occupancy count was taken
4. Current occupancy in trigger area
5. Average occupancy over a set time in trigger area
6. Maximum occupancy over a set time in trigger area

2.9 Video Export

The API provides the facility to export video stored on the NVR.

1. The media data returned will be in an MP4 container format.
2. The server can provide a number of simultaneous active export sessions.

3. Conclusion

Please note that this document only provides a brief overview of the features and capabilities of the CathesisVision API. For more information, consult support@cathesisvideo.com.